



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,995	10/19/2004	Chang-Yuan Wu	ACMP0176USA	5994
27765 7590 04/03/2007 NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			EXAMINER SHANKAR, VIJAY	
			ART UNIT	PAPER NUMBER
			2629	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/03/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/03/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

winstonhsu.uspto@gmail.com  
Patent.admin.uspto.Rcv@naipo.com  
mis.ap.uspto@naipo.com.tw

<b>Office Action Summary</b>	<b>Application No.</b> 10/711,995	<b>Applicant(s)</b> WU ET AL.	
	<b>Examiner</b> VIJAY SHANKAR	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 January 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Zumkehr et al (US 2004/0123207 A1).

Regarding Claims 1, 9, 15, Zumkehr et al teaches an input detection device (122 in Fig.1) (Figs.1-7; Paragraph 0011-0012, 0025-0053), comprising: a button set circuit comprising a plurality of buttons utilized for inputting commands, each button outputting a unique voltage level when the button is activated (Fig.1A-1B; Paragraph 0025-0031); a voltage generating circuit capable of outputting a plurality of generated voltage levels corresponding to the voltage level that is different from the voltage levels of all the other buttons outputted by each of the buttons in the button set circuit (Figs.1-4, 7A-7B; Paragraph 0011-0012; 0045-0047); a plurality of input/output (I/O pins) for specifying which generated voltage level is output by the voltage generating circuit

Art Unit: 2629

(Fig.1A-1B; Paragraph 0025-0033); a comparator (420 in 4A,4B) for comparing each of the generated voltage levels outputted from the voltage generating circuit with the voltage outputted from the button set circuit (Fig.4,7; Paragraph 0011-0012, 0045-0046); (see Figures 2A-2B, 3, 7A-7B, Paragraph 0010-0012; 0035-0036, 0041-0043); and a control circuit for controlling the voltage generating circuit with the plurality of I/O pins to alternately output each of the generated voltage levels, for recording the generated voltage level that is approximately equal to the voltage outputted from the button set circuit, and for determining which button in the button set circuit was activated based on the recorded generated voltage level. (See Figs.1-7; Paragraph 0011-0012, 0035-0036, 0041-0043, 0045-0053).

Regarding Claims 2 and 10, Zumkehr et al teaches an input detection device wherein the control circuit records the highest generated voltage level that is lower than the voltage outputted from the button set circuit. (Figs.1-7; Paragraph 0011-0012, 0045-0053).

Regarding Claims 3-4 and 11, Zumkehr et al teaches an input detection device wherein the control circuit records the lowest generated voltage level that is higher than the voltage outputted from the button set circuit, and the pins are general purpose . (Figs.1-7; Paragraph 0011-0012, 0045-0053).

Regarding Claims 5 and 12, 16, Zumkehr et al teaches an input detection device wherein the unique voltage level associated with each button is greater than the unique voltage level associated with a preceding button by a factor of two and is less than the unique voltage level associated with a succeeding button by a factor of two. (Figs.1-7; Paragraph 0011-0012, 0025-0033, 0045-0053).

Regarding Claims 6-8 and 13-14, 17-18, Zumkehr et al teaches an input detection device wherein when two or three buttons are pressed simultaneously, the input detection device determines that the button having a highest priority was activated, and wherein the button outputting the largest unique voltage level has the highest priority, and wherein  $n+1$  I/O pins are capable of detecting which button of up to  $2n$  buttons was activated,  $n$  being a positive integer. (Figs.1-7; Paragraph 0011-0012, 0025-0033, 0045-0053).

### ***Response to Arguments***

3. Applicant's arguments filed 1/11/2007 have been fully considered but they are not persuasive.

Applicant argues that Zumkehr et al does not teach a way to determine which button of a button circuit was pressed by comparing the voltage output by a button circuit with a plurality of voltage levels.

However, Zumkehr et al does recites and discloses an input detection device comprising a way to determine which button of a button circuit was pressed by comparing the voltage output by a button circuit with a plurality of voltage levels (see Figures 2A-2B, 3, 7A-7B, Paragraph 0010-0012; 0035-0036, 0041-0043).

**4. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2629

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VIJAY SHANKAR whose telephone number is (571) 272-7682. The examiner can normally be reached on M-F 7:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BIPIN SHALWALA can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



VIJAY SHANKAR  
Primary Examiner  
Art Unit 2629

VS